

VA TBI Model Systems/IMAP Newsletter

Issue 12: Summer 2022



Gaining a Better Understanding about the Chronic Phase of TBI Recovery

Here, we present several recent research results from our lifetime TBI study. A variety of topics are covered that relate to the chronic phase of TBI recovery. Within this issue, we summarize findings from four studies. The results presented are based on data from the Traumatic Brain Injury Model Systems (TBIMS) study of rehabilitation outcomes.

Over the course of this lifetime study, we have gained greater insight into the long-term effects of traumatic brain injury. Issue 12 mainly focuses on the chronic phase of recovery after TBI. However, one of our primary aims is to carry out a wide variety of research that can look at many different aspects, such as

comorbidity, chronic pain treatment, sleep outcomes post-TBI, and much more. By doing so, the TBI Model Systems Study produces research that helps advance treatments, rehabilitation practices, and services offered to Veterans and Service Members. We thank our research participants for contributing to this lifetime study.



TBIMS

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Email TampaTBIMS@VA.GOV and include your name, address, and phone number and we will add you to our next mailing!

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Disorders of Consciousness

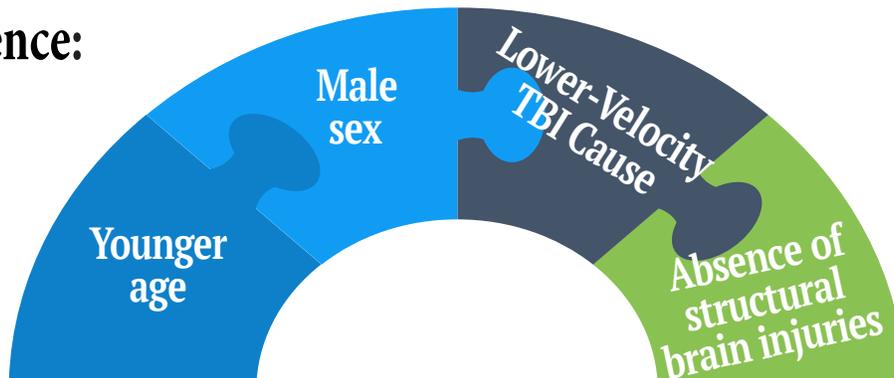
Lead Author: Dr. Robert Kowalski

Some people who survive a TBI end up in a coma, vegetative state, or minimally conscious state. These serious conditions are called Disorders of Consciousness (DoC). Persons with DoC spend a long time with limited or absent awareness of their environment. They are unable to respond to questions. They are unable to accurately identify objects. Also, they require more intense care from family and healthcare staff.

A study by Dr. Robert Kowalski and colleagues (2021) looked at the duration and predictors of DoC. They studied 2058 rehabilitation patients with TBI. All were admitted with a DoC. Most (82%) regained consciousness by discharge. Also, 40% regained independence. Those with DoC at discharge were males and of younger age. They also spent more time in acute care prior to rehabilitation. This study suggests that continued medical care and rehabilitation may benefit persons with DoC following TBI.

Source: Kowalski RG, Hammond FM, Weintraub AH, Nakase-Richardson R, Zafonte RD, Whyte J, Giacino JT. Recovery of Consciousness and Functional Outcome in Moderate to Severe Traumatic Brain Injury. *JAMA Neurol.* 2021;78(5):548-557.

Predictors of Functional Independence:



Sleep Apnea & Posttraumatic Stress

Lead Author: Dr. Shannon Miles

Veterans with a TBI are at risk for other health conditions like sleep apnea and posttraumatic stress disorder (PTSD). Each of these conditions interfere with sleep quality. This is concerning because insufficient sleep is harmful to health in the long term.

Dr. Miles wondered if sleep apnea was related to PTSD symptoms. Her research team studied a group of 302 veterans with TBI. The veterans completed a self-report measure of PTSD symptoms. They also completed a health history checklist that included a question about sleep apnea. 32% of veterans with sleep apnea screened positive for PTSD. In contrast, only 19% without sleep apnea had a positive PTSD screen. Sleep apnea was not the only predictor of PTSD. A positive PTSD screen was also related to prior combat deployment, a longer time since TBI, a higher number of TBIs, and prior mental health treatment. Dr. Miles and colleagues concluded that both sleep and mental health should be addressed in veterans with TBI.

Source: Miles SR, Silva MA, Lang B, Hoffman JM, Venkatesan UM, Sevigny M, Nakase-Richardson R. Sleep apnea and posttraumatic stress after TBI: A Veterans Affairs TBI Model Systems Study. *Rehabil Psychol.* 2021;66(4):450-460.

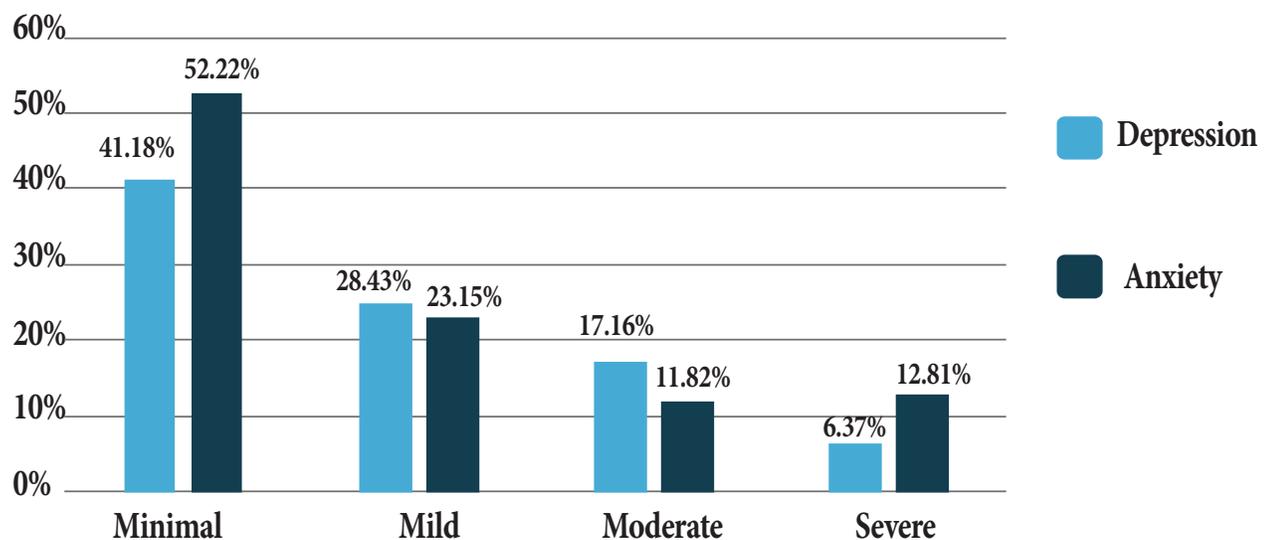
Predictors of Anxiety & Depression Symptoms

Lead Author: Dr. Angela Benavides

Civilians with TBI are more likely to experience depression and anxiety than those without TBI. Also, depression and anxiety might dampen functional independence 1 year after TBI. Dr. Angela Benavides and colleagues wondered whether depression and anxiety affected Veterans with TBI as well. They studied 319 Veterans who were 1 and 2 years post-TBI. About 59% had mild to severe depression. About 48% had mild to severe anxiety. Depression and anxiety at year 1 each predicted depression and anxiety at year 2. Substance abuse and being unemployed predicted anxiety at year 2. Those with less social participation had greater depression and anxiety at 2 years. These study findings highlight the need to screen for mental health symptoms after TBI.

Source: Benavides AM, Finn JA, Tang X, Ropacki S, Brown RM, Smith AN, Stevens LF, Rabinowitz AR, Juengst SB, Johnson-Greene D, Hart T. Psychosocial and Functional Predictors of Depression and Anxiety Symptoms in Veterans and Service Members with TBI: A VA TBIMS study. *J Head Trauma Rehabil.* 2021;36(6):397-407.

Prevalence of Depression & Anxiety Symptoms 2-years post-TBI:



Functional Changes Post-TBI

Lead Author: Dr. Flora Hammond

Many people who survive a TBI can live independently. But there are some who cannot care for themselves and need supervision. Some might even get worse over time. However, Dr. Flora Hammond noticed that most research studies looked at functional recovery over a short time frame. Few studies looked beyond five years after injury.

Dr. Hammond and colleagues wanted to shed light on longer-term recovery. They examined 1381 TBI survivors to see how independent they were 5-15 years after injury. Only 4.4% declined in self-care. 4.9% became less mobile. 5.9% had cognitive decline. Fortunately, most remained stable. Some even improved. Importantly, aging was the main driver of loss of function. The severity of the initial TBI played a minor role in functional change all the years. These research findings reveal it is important to screen individuals as they age with TBI for possible decline.

Source: Hammond FM, Perkins SM, Corrigan JD, Nakase-Richardson R, Brown AW, O'Neil-Pirozzi TM, Zasler ND, Greenwald BD. Functional Change from Five to Fifteen Years after Traumatic Brain Injury. *J Neurotrauma.* 2021;38(7):858-869.

Meet the Project Investigators of the Tampa VA TBI Model Systems



Pictured left to right: Dr. Shannon Miles, Dr. Risa Nakase-Richardson, and Dr. Marc Silva

Recent Team Awards



James A. Haley Veterans' Hospital High Reliability Organization (HRO) Non-Clinical Award for Research-Based Suicidal Ideation Management Protocol



VA VISN 8 High Reliability Organization (HRO) Non-Clinical Award for Research-Based Suicidal Ideation Management Protocol



American Congress of Rehabilitation Medicine Military and Veteran Networking Group Best Poster Award

TBI Resources

Make the Connection

Veteran and Service Members connection to the resources, tools, and support you need:
MakeTheConnection.net

U.S. Department of Veteran Affairs

Care options for TBI, mental health appointment, Resources:
Mentalhealth.va.gov/index.asp

Military and Veteran Crisis Line

1.800.273.8255, Press 1 to Connect or
Text 838255

Model Systems Knowledge Translation Center

Learn about disorders of consciousness, depression, sleep, and chronic pain that occurs after a Traumatic Brain Injury.

MSKTC.org/tbi/Hot-Topics

MSKTC.org/tbi/videos

Past Versions of Newsletter

Find past versions of our TBIMS/IMAP Newsletter at:

Polytrauma.va.gov/news-and-resources/index.asp

Traumatic Brain Injury Center of Excellence

Find resources, clinical tools, and reports about Traumatic Brain Injury:

Health.mil/Military-Health-Topics/Centers-of-Excellence/Traumatic-Brain-Injury-Center-of-Excellence

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